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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,643

06/06/2005

Mart Min

KOP001-US

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EXAMINER

DANEGA, RENEE A

ART UNIT

PAPER NUMBER

3736

MAIL DATE

DELIVERY MODE

09/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,643	MIN ET AL.	
	Examiner	Art Unit	
	Renee Danega	3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-25 is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear in claim 10 how “said first modified signal” can have “different constant value sections from said first modified signal”. Likewise, in claim 13 it is unclear how “said second modified signal” can have “a different value from the constant value sections of said second modified signal”. It is unclear how one would make a modified signal different from itself.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Kinast (US 6377845).

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- Regarding claim 18, Kinast teaches a device for measuring of an electrical complex impedance comprising a first generator (33) fir generating an excitation signal capable for generating a modified rectangular wave signal, the signal having constant value sections shortened by a first time interval during each half period to suppress higher harmonics; a second generator for generating a reference signal, wherein the reference is a modified rectangular wave signal having constant value sections shortened by a second time interval during each half period to suppress higher harmonics; and a synchronous detector having first and reference input for receiving a response signal from an object and a reference signal (column 13, lines 34-45) (claims 3, 5) (column 11, lines 31-50).
- Regarding claim 19, Kinast teaches the phase shift between the excitation signal and reference signal is 90 degrees (column 11, lines 36-40).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Min et al. ("Design Concepts of Instruments for Vector Parameter Identification") in view of Kinast (US 6377845).

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- Regarding claim 10, Min teaches a method for measuring of an electrical complex impedance of an object using periodic non-sine wave signals comprising measuring a response signal from the object to the excitation signal using synchronous demodulation wherein the reference signal is a rectangular wave and both the excitation and reference signals have constant value sections, and generating a first modified signal by modifying either the excitation or reference signal so that the constant value sections of the first modified signal are shortened by a predetermined first time interval during which said first modified signal has a different constant value (pgs 1-3). Min doesn't expressly teach the excitation signal to be generated from rectangular waves. However, Kinast teaches a method for measuring impedance through an object in which sinusoid, or non-sinusoid waves such as rectangular or triangular waves can be used in a method with synchronous demodulation (column 8, lines 11-25) (column 13, lines 36-45). It would have been obvious in view of Kinast to substitute a non sine wave signal for the excitation signal of Min in order to measure impedance.
- Regarding claim 17, Min teaches the first modified signal has a value of zero during said predetermined first time interval (pg 2).

7. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Min as applied to claim 10 above, and further in view of Eek et al.

(Electrical Bio-Impedance Measurement in a Rate-Adaptive Pacemaker). Min doesn't

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expressly teach shortening signals over a first time interval to suppress the 3rd harmonic, but does teach shortening them to eliminate harmonics (Figure 4) (pg 2). Eek et al. teaches a method of measuring impedance having the method step of suppressing signal harmonics interfering with accurate signals (see page 2). It would have been obvious in view of Eek et al. to select a predetermined first time interval of Min to suppress the 3rd harmonic in order to be able to separate and identify the signal components in bioimpedance measuring.

- Regarding claims 12, 15, and 16, Eek et al. would meet the respective time intervals to suppress unwanted harmonics. Further, such intervals could be found through application of known Fourier transforms by one of ordinary skill in the art for eliminating harmonics.
- Regarding claim 14, Min teaches taking the first signal to zero, but not expressly the second (Figure 4). It would have been obvious to one of ordinary skill in the art that either first or second signals could be taken to zero to eliminate a harmonic.

Allowable Subject Matter

8. Claims 20-25 are allowed for the reasons stated in the prior action.

Response to Arguments

9. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renee Danega whose telephone number is (571)270-3639. The examiner can normally be reached on Monday through Thursday 8:30-5:00 eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAD

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736